Missouri Botanical Garden

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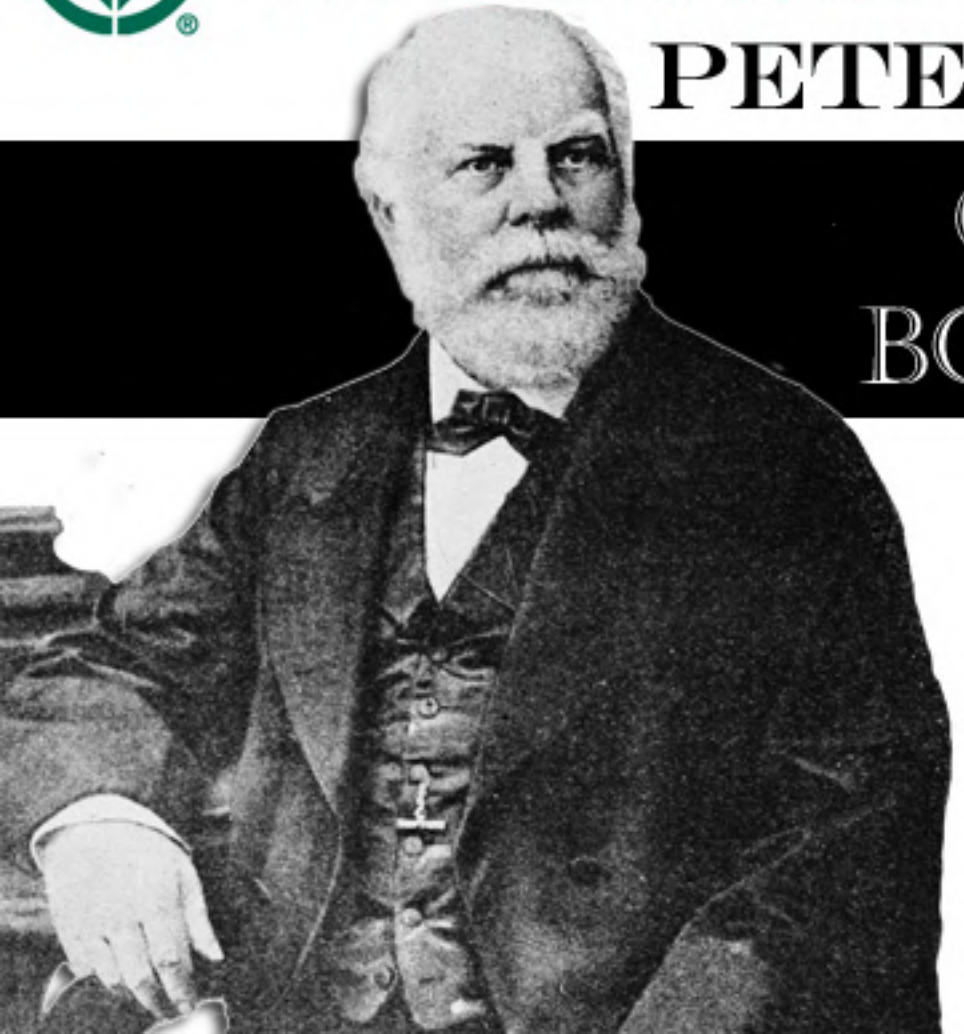
George Engelmann Botanical Notebooks



Pagination Note:
Since many of the items lack a specific page number, the page number displayed online refers to the sequentially created number each item was given upon cataloging the materials.

Groups of Opuntiae.

Op. stricta (if correctly named), Pseudotuna, glauca, Ficus Indica.

Op. triacantha — Curassavica — ? vulgaris ? — polyacantha

Op. Dillenii — Engelmannii — fulgida — leptocaulis

Op. candelabriformis — spinulifera — strictacantha (?) — oligacantha

Op. Auberi — Rafinesquii

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Opuntiae is noting from the joints
push out their roots from the areolae
above the spines, just where the
buds themselves appear. (Opuntia senilis)

An unripe fruit of Opuntia monacantha
lying on the ground, was sticking root
from several of the areolae and from
others on the opposite (upper) side was
pushing out two quite vigorous joints!

H Bol Naples Jan 7 1869

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Octob 1861 1.

Opuntia fruit

The examination of the different stages of fruit of Opuntia glaucophylla in Hort Col Missouri (see my drawings) seems to indicate that:

1, The (green) fruits of Opuntiae are differently shaped, some are shorter and plumper and less angular or tuberculated, containing more seeds, in other words, more normal; and others, more elongated, more angled usually thinner, with more areolae and with a smaller ovarian cavity [in other instances I have in these fruit, found the ovarian cavity almost obliterated and all the ovula abortive]

2, The umbilicus is deeper, in proportion to the greater length of the fruit.

3, The seed of the full grown but not ripe, fruit is very glutinous, or rather viscid, surrounded by elongated often clavate fibres, which are one celled or consist of several (often 2) cells, proced from the whole seed coat (arillus) but principally from the carina and apparently less so from the convex faces of the seed, and which are filled with a very glutinous insipid viscid colourless juice, which, by steeping the seed in water, communicates its mucilaginous (copy) properties to a large quantity of water.

4 In the ripe fruit every thing is changed. It has become soft and pulpy, enlarging its volume smoothing the angles, ridges and protuberances and considerably diminishing the depth of the umbilicus.

5. The pulp around the seed is no longer but very juicy and more abundant. The filamentous appendages of the seed coat having become enlarged and divided into many cells of various shapes, filled and swollen

Question:

May not all the cells be filled originally with colourless air — and some cells have lost it in preparing the object for the microscope?

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more or less colourd (purple)
with coloured and watery juice, which are finally
detached and ~~becoming~~ free from the pulp. — The cells
seem some of them (usually the larger ones) colourless
and others coloured (the smaller and more irregular
ones). The colour is purple but in a fruit,
which seems to be somewhat decomposed. I find
~~the~~ only few purple cells, others contain a dark
red juice and others again are yellow.

It is probable that the whole seed coat is
covered with the hairy excrescences which afterwards form the
pulp; but it is certain that they, at full maturity,
adhere only to the rim or carina (the attached
part of the funicules) while the convex face of the
seed soon appear naked.

6, On the unripe seeds of some species
(I have examined C. Brasiliensis and C. monacantha
and C. monacantha Hort Bot Mosc. th. Dyh) I find
their ~~hairlike~~ appendages as a dense and long
and tough coat (2–3 lines long) consisting of several called
hair of uniform thickness or clavate, and
very firmly adhering to the surface. — It remains
to be seen how they will change in ripening.

7. The funicules enters into the pulp ~~of the seed~~
but can always be recognized by its spiral
vessels and by the smaller cells (many of which
contain agglomerations of crystals, which I now find in the
8 The flesh of the fruit, as distinguished from pulp proper.
the pulp surrounding the cavity, consist of smaller
cells, many of them filled with aggregation of crystalls, some
with colourless others with purple juice,

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Berry of Opuntia colour inside & outside — time of ripening

smooth tuberculate.

globose — ovate — oblong Napoli Jan 1869

sessile with broader base

attenuated below

(a)

Areolae few or many

close or distant

all more or less equal, or upper ones

much larger with longer bristles,

bearing part of berry with or without areolae

Bristles few, small, deciduous, or

stouter, longer, more persistent,

some always or really spiny

Umbilicus flat (and the walls scarcely make

or diminished (and usually make)

hemispherical or infundibuliform

also with flat bottom & vertical sides.

(~~Cavity~~ subcylindrical))

Cavity of fruit the whole fruit or in upper part only

globose or ovate.

Seeds few or many

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Germination of Op. echinocarpa

Opuntia cymochila
with 3 cotyledons

z- 23.

z- 7.4

O. Whipplei

Op. Engelmanni
Santa Rosa

No 91.

O. Rafinesquii

24

aufgefunden
No 5

7.6

Op. platycarpa

I, ... a Practising Physician, do hereby certify, in the City

DATE OF DEATH.	NAME OF DECEASED.	PLACE OF NATIVITY.	
	Blacksmith	Ill	70

0.070 above my old

Witness my hand, the day

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I, ... a Practising Physician, do hereby certify, in the City

DATE OF DEATH.	NAME OF DECEASED.	PLACE OF NATIVITY.	

Witness my hand, the day

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According to A Scholl

the following figures in Mexican Boundary Report

vol I refer to

Opuntia tenuiata pl. 37. 64

O. occidentalis pl. 43. 62.

O fulgida pl. 44. 51. 54. 55. 56. 57. 58. 60

O. Whipplei pl. 47

O. Emoryi pl. 55

O. echinocarpa pl. 58. 62.

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JAMES E. YEATMA
WAYMAN CROW,
ROBERT CAMPBEL
JOHN H. BEACH,
JOHN T. DOUGLAS
C. R. STINDE,
J. B. S. LEMOINE,

On behalf of th

you an invitation to jo

Evening of the Thirtee

You will pleas

Board of Directors, *at*

proper place on the pla

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"

Cactus Lin — Opuntia Juss

Gaertn de fruct II. p. 265 T. 138 (1791)

"

— — — Semina ossea, reniformia turgide lenticularia, pallide testacea, annulo crasso calloso circumdata.

— — — albumen nullum

— — — cotyledones tenuissimae incumbentes

---

the figures the fruit & seed of Opuntia vulgaris under the name of Cactus Opuntia

Deutsche Apotheke

—von—

John G. Schütze,

Südwestliche Ecke von Broadway und Morgan Straße,

St. Louis, Mo.

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Vary spiny Sept 1867

Opuntia dejecta Salm Pfeiff. p. 159 "Havana"
Hort bot Missouri. sub nom "2. Nopalea dejecta"
Stems erecto cylindracea, 3 pedali; ramis horizontalibus divaricatis, ramosissimis, laxis supra dimidium pedalis dejectisve; articulis majoribus 8–12" long. 1½–2 lat. areolis remotis, tuberculatis, ½ polis subulat squamosis aculeis albidis s. roseis apice fuscis, ei arct. junioribus 1 superore majore 1–2 inferioribus setaceis; in vetustis 3–5 aeul. pauls robustioribus 1¼–1½ lin longis.
Pfeiff. p. 159. says "aeul 5–6 albi", in stem longiore pollicari":

July 23d 1863 a few flowers yet open, many have been in bloom — the bush is covered with young fruit. —

Whole flower abt 34 l. long to top of style.

Ovary 14 lines
Sep & petal 10 l
stamens 5 l.
style & stig 5 l.
} 34 lines

Ovary oval, clavate, scarcely tuberculate with 28–30 areolas. Ovary small subulate scales scales of tube 12–13 triangular acute, erect or slightly patulous, dirty red, very to orange Petals & erect adpressed, obtuse, crimson. Base of tube hemispherical, not obconic as is mostly the case - only lowest longitud part, below the bulb or disc of the style naked.

Filaments red, longer the petals, anthers yellow obtuse or emarginate

Style with a wide disc like enlargement on bulb just above the very narrow base, thence abruptly cylindrical.

8 greenish capitate (always?) stigmas.

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Phyllotactic arrangement of areoles on ray of scpls & petals follows the same system; in one of the flows $\frac{6}{10}$ with 4 & 6 spirals most conspicuous; in another as $\frac{8}{13}$ with 5. & 8 spirals.

Joints very green, leaves patulous or recurved a little shorter than in Peiresi, joint rather thinner, spines stouter 1–3, ovary different tubercles

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